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THE SECURITY HOLDINGS OF NATIONAL BANKS

An interesting feature of the national banking system of the United States has been the investment of a considerable part of the funds of the banks in securities other than United States bonds. On June 4, 1913, the net holdings of such securities by the 7,473 national banks of the United States was $1,050,970,119 —the largest absolute amount, and the largest proportion relative to total banking assets held at a corresponding season in the history of the national banking system.

The net amount of such investments—corresponding to "security holdings" as employed in the present paper—is obtained by adding to the amount of "bonds, securities, etc." as reported to the Comptroller of the Currency, the amount of "other [than United States] bonds to secure United States deposits," and deducting from this total the amount of "bonds borrowed." Omission is made of all United States bonds, whether held to secure circulation, to secure deposits, or 'on hand'—for the reason that other than investment considerations may be regarded as having induced such purchases. On the other hand, the occasional temporary use of other than United States bonds to secure public deposits does not affect their primary significance as investment securities, and they are therefore included. Deduction of "bonds borrowed" first becomes possible in November, 1902, prior to which no report specifically covering such transactions was required. The foregoing method of computation errs on the side of conservatism in that some part of "bonds borrowed" consists of United States bonds, and also in that the banks' holdings of short-time obligations of railroad, public utility, or other corporations are sometimes reported under the head of "loans and discounts" and not of "bonds, securities, etc."[1] But as against this, the

[1] As regards existing practice, Acting Comptroller T. P. Kane writes me: "Short time obligations or notes of railroad, public utilities, or other corporations are preferably to be carried under the heading of 'Loans and discounts,' but this is not the universal practice, as many banks carry them under the heading of 'Bonds, securities, etc.' This office has not made any specific requirement in the premises, leaving it to the banks to determine under which heading to carry them. Unlike a regular bond, however, such notes are held to be subject to the limit of loans."

banks are required to return under the head of "bonds, securities, etc." their holdings of "stocks, presumably taken for debt," and of "warrants, claims, judgments, etc."

I

The security holdings of the banks, including "bonds borrowed," were distributed, at the latest available date, June 14, 1912, as follows:

	Per cent
State, county, and municipal bonds	16.63
Railroad bonds	32.87
Other public service corporation bonds	18.13
All other bonds	20.73
Stocks (presumably taken for debt)	3.98
Warrants, claims, judgments, etc.	3.50
Various securities with the Treasury as security for public deposits	2.88
Foreign government bonds	.79
Other foreign bonds and securities	.40

The only significant variation in relative distribution, since September 1, 1909, when the classification upon which this distribution is based was first reported by the banks and thereafter tabulated for one call in each year in the comptroller's annual report, has been a moderate decline in the proportion of railroad bonds and a corresponding increase in the securities of public service and industrial corporations.

Authority to make investments in bonds, although not expressly conferred, has been held as included in the powers of a national bank to discount and negotiate promissory notes, bills of exchange, and other evidences of debt, and this administrative construction has been confirmed by judicial decision that national banks are authorized to purchase corporate and municipal bonds as such evidences of debt.[2] Whatever doubt may have remained, in the absence of adjudication by the United States Supreme Court, was *de facto* dispelled in 1908 by the provisions of the Aldrich-Vreeland act looking to the possible acceptance of bonds other than United States bonds as security for additional note circulation.

The motives leading to such investments are in some cases specific and local—as the purchase of the bonds of a particular state or city for tax-exemption purposes, or to serve as the legal or practical requisite for securing public or semi-public deposits. So

[2] *Newport National Bank* v. *Board of Education*, 70 S.W. 186 (*Digest of Decisions Relating to National Banks*, Washington, 1912, p. 497).

too the profitable banking account of a private corporation may sometimes be more certainly retained by participation in its financing. But such purchases, as well as the bonds acquired by the taking over of hypothecated securities, explain only a fractional part of the banks' aggregate holdings.[3]

As familiar banking practice, the purchase and ownership of such securities by the national banks is commonly explained upon the theory of a "secondary reserve."[4] Sound banking policy, it is held, dictates that cash reserves should be supplemented by income producing investments of indubitable safety and easy marketability—available for quick, favorable conversion into cash, when monetary drain threatens exhaustion of the primary reserve. Thus, Professors E. D. Howard and J. F. Johnson state that "the ready market which is at hand under normal conditions for the bonds [securities, etc. owned by the banks] causes the bank to regard them as a form of secondary reserve which can almost immediately be converted into money in case of emergency."[5] Professor F. A. Cleveland includes such securities among "those assets which are held as an 'invested-reserve' as a means of obtaining 'cash' to meet extraordinary demands on credit-accounts outstanding."[6] Mr. Horace White declares: "It is desirable that a bank should have a portion of its interest-bearing assets so invested that it can be quickly turned into cash to meet a sudden emergency. . . . Stock exchange securities are held by banks, partly because they can be sold at short notice to meet such emergencies."[7] Mr. Victor Morawetz adds that "As long as finan-

[3] Hollander, *Bank Loans and Stock Exchange Speculation* (Washington, 1911), p. 17. Here and there particular banks have entirely abstained from such investments, and in rarer cases this restraint has become an avowed policy.

[4] The term "secondary reserve" has no precise meaning in national banking law or administration. Mr. Frank A. Vanderlip writes me that in the street use of the phrase, "it is represented by bonds, call loans, and anything that can readily be liquidated in twenty-four hours or so. Commercial paper, which is put in the portfolio, with a definite maturity, such as sixty or ninety days, cannot, of course, be considered a part of the so-called secondary reserve. Abroad where the system of acceptances of commercial paper and the presence of a discount market gives prime acceptances a ready marketability, such paper could be considered a part of this reserve."

[5] *Money and Banking* (New York, 1910), p. 267.

[6] *The Bank and the Treasury* (New York, 1908), p. 114. Professor Cleveland more than any other student of our national banking system has given attention to the effect of security holdings upon banking activities.

[7] *Money and Banking* (Boston, 4th ed., 1912), p. 210. Mr. White, however, criticises severely the "misuse of terms" whereby certain state laws allow a

cial conditions generally are not strained, bonds or other securities that have a ready market may serve as a reserve, because by selling such bonds or securities a bank can obtain money."[8]

In accordance with the theory of a "secondary reserve," the proportion of their resources which the banks might be expected to maintain in the form of such securities should be—apart from seasonal, cyclical, and sectional fluctuations—reasonably constant. As a matter of fact, practically from the establishment of the national banking system to the present time the ratio of security holdings to banking resources has increased. Occasionally, there has been decline; but thereafter the tendency has been resumed and a higher ratio attained. The ratio of securities to total resources has been, for each year since 1863, as follows:

TABLE 1.—*Ratio of securities to total resources.*

Year	Averaged calls	Autumn call	Year	Averaged calls	Autumn call
	Per cent	*Per cent*		*Per cent*	*Per cent*
1863	.59	.59	1888	3.54	3.54
1864	.32	.47	1889	3.64	3.64
1865	.91	1.39	1890	3.81	3.67
1866	1.16	1.03	1891	3.91	3.89
1867	1.30	1.43	1892	4.25	4.40
1868	1.29	1.32	1893	4.63	4.77
1869	1.35	1.48	1894	5.50	5.56
1870	1.43	1.56	1895	5.68	5.69
1871	1.36	1.41	1896	5.69	5.78
1872	1.28	1.33	1897	5.72	5.63
1873	1.27	1.29	1898	6.11	6.37
1874	1.43	1.48	1899	6.67	6.88
1875	1.64	1.78	1900	7.08	7.27
1876	1.75	1.88	1901	7.61	7.87
1877	1.87	1.97	1902	8.03	8.06
1878	2.04	2.08	1903	7.90	7.94
1879	1.95	2.11	1904	7.99	8.12
1880	2.16	2.31	1905	8.40	8.49
1881	2.47	2.62	1906	8.13	8.14
1882	2.81	2.75	1907	8.32	8.44
1883	2.93	2.99	1908	8.95	8.97
1884	3.11	3.12	1909	9.10	9.22
1885	3.18	3.18	1910	8.38	8.45
1886	3.28	3.25	1911	9.24	9.59
1887	3.37	3.38	1912	9.45	9.43

portion of the reserves of state banks to consist of the bonds of the state itself, or of the United States "since a bank reserve signifies something which can be immediately used to pay the demand obligations of the bank" (*ibid.*, p. 366). Particulars as to such provisions in state banking systems are conveniently found in Professor George E. Barnett's *State Banks and Trust Companies since the Passage of the National Bank Act* (Washington, 1911), p. 115.

[8] *Banking and Currency Problem in the United States* (New York, 1909), pp. 18-19.

The annual increase in the ratio of securities, as indicated by the percentage of securities to total resources, averaged at successive calls in each year, has been interrupted but seven times in the history of the national banking system. Of these, three (1863-64, 1867-68, 1870-1873) may be neglected as pertaining to the period before 1873. The 1902-03 arrest is apparent rather than real, being due to the inclusion of "bonds borrowed" in security holdings, in the computation of the 1902 ratio.[9] Of the remaining three occasions, one (1878-79) derives its quality from the sharp loan expansion which began at the end of 1879, in final recovery from the panic of 1873. A comparison of the securities held as late as the autumn call of 1879 with those held at a corresponding date of the preceding year would show increase instead of reduction. The significant occasions are 1905-06 and 1909-10, in each of which periods the initial year was marked by relatively heavy bond-buying—1905 as a year of high business prosperity, 1909 as a year of premature business recovery.[10]

The gain in relative importance of securities has not been at the expense of any one item or group of items of banking assets. One element after another has tended to increase or diminish, in response to specific episodes in our monetary history; but the point of arrest or reversal has been far less remote. Up to 1890 the gain in the security ratio is absorbed in the decline in relative importance of investments in United States bonds. From 1890 to 1900 the gain is reflected in the decline in the ratio of loans and discounts to total resources. From 1900 on, the explanation is found in a composite of smaller declines in the ratios of United States bonds, lawful money, and due from banks. The percentage relation of the important constituent items to the aggregate resources of national banks has been, for each year since 1863, as follows:[11]

[9] Cf. page 1, above.

[10] If instead of the averaged, the autumn calls be compared, three additional arrests are noticeable—1865-66, 1896-97, and 1911-12, whereas that of 1878-79, as noted above, disappears.

[11] The percentages of loans, United States bonds, and lawful money from 1897 to 1912 are taken from the 1912 report of the Comptroller of the Currency (Table 47, p. 197). For the years before 1897, it has not been possible to use the percentages in the corresponding tables in earlier reports, since, as Comptroller Lawrence O. Murray informs me, "it appears that for the years prior to 1897 the combination of the capital stock, surplus, undivided profits, national bank circulation, and individual deposits was used as the basis of the computation instead of the aggregate resources."

TABLE 2.—*Percentage of loans, United States bonds, lawful money, net securities, and due from other banks to total resources.*

Year	Loans	U. S. bonds	Lawful money	Net securities	Due from other banks
1863	32.3	33.5	8.3	.5	15.5
1864	31.3	36.3	15.0	.4	11.4
1865	35.8	31.4	15.2	1.3	7.8
1866	39.5	27.9	14.0	1.0	8.0
1867	40.6	27.9	7.5	1.4	6.9
1868	42.1	26.5	6.7	1.3	7.0
1869	45.6	25.6	7.1	1.4	6.7
1870	47.3	25.0	6.4	1.5	7.2
1871	48.0	23.6	7.0	1.4	8.2
1872	49.9	23.3	6.9	1.3	7.2
1873	51.5	22.5	7.2	1.2	8.1
1874	50.8	21.9	7.6	1.4	7.1
1875	52.3	21.1	7.0	1.7	7.8
1876	50.9	21.0	7.3	1.8	8.0
1877	51.2	21.9	7.0	1.9	7.4
1878	47.1	25.0	7.2	2.0	7.8
1879	47.0	22.9	7.3	2.1	8.9
1880	49.4	19.0	8.2	2.3	10.1
1881	49.7	17.8	7.3	2.6	9.7
1882	51.8	16.4	7.2	2.7	8.2
1883	55.1	16.0	7.9	2.9	8.8
1884	54.6	15.9	9.6	3.1	5.8
1885	53.6	13.9	10.8	3.1	9.6
1886	57.7	11.5	8.9	3.2	9.5
1887	60.5	8.5	9.3	3.3	9.7
1888	59.8	8.2	9.5	3.5	10.4
1889	60.6	6.4	8.8	3.6	11.1
1890	63.2	5.4	8.9	3.6	10.6
1891	62.4	5.4	9.2	3.8	10.5
1892	61.8	5.2	9.3	4.4	11.6
1893	59.2	7.2	11.1	4.7	8.9
1894	57.7	6.4	11.5	5.5	11.4
1895	60.1	6.8	9.9	5.6	10.9
1896	58.0	8.0	10.5	5.7	10.1
1897	55.3	7.0	6.4	5.6	13.3
1898	54.2	10.6	9.2	6.3	13.1
1899	53.7	7.1	10.0	6.8	14.7
1900	53.2	8.1	10.3	7.2	14.5
1901	53.0	7.8	9.5	7.8	13.7
1902	53.7	7.5	8.3	8.0	13.4
1903	55.2	8.6	8.8	7.9	12.9
1904	53.4	7.9	7.2	8.1	13.7
1905	53.9	7.4	8.9	8.4	13.8
1906	54.0	7.8	7.8	8.1	13.3
1907	56.1	7.9	8.4	8.4	12.7
1908	52.9	7.9	9.6	8.9	13.3
1909	53.5	7.6	9.5	9.2	12.8
1910	55.6	7.5	8.9	8.4	12.3
1911	54.5	7.4	8.6	9.5	12.5
1912	55.1	7.1	8.1	9.4	13.1

II

The course of bond accumulation by the national banks reflects the expansion of banking operations in relation to general financial and industrial development.

From the organization of the national banking system in 1863 to the panic of 1873, the banks of the country made no significant additions to their security holdings. Upon two occasions—January-April, 1867, and March-June, 1870—abrupt increases occurred, traceable to special transactions, but thereafter holdings remained fairly constant around the higher levels. Of the original amount so held, the largest part, owned in the main by eastern city banks, might be regarded as a heritage from the reorganized state banks. On April 1, 1867, the 1,642 banks in operation, with total resources of $1,465,000,000, held only $20,194,000 securities, of which more than one half was owned by the banks of New York, Albany, Philadelphia, and Boston, and practically three fourths by banks in the states of New York, Massachusetts, and Pennsylvania. With the rapid reduction of the national debt and the tempting rise in the price of government securities in the years following 1866, the banks reduced their holdings of United States bonds used for purposes other than to secure circulation; but the proceeds of such liquidation were utilized as reserves and credited to surplus and undivided profits. The return of business activity from 1869-1870 on brought with it an expansion of banking energy; the number of banks increased from 1,612 in 1870 to 1,968 in 1873, and the volume of loans grew correspondingly. But again during these as during the earlier years, the banks acquired no additional securities. Indeed, allowing for the additional banks organized and the continued liquidation of United States bonds, the contrary tendency prevailed. In absolute amount the security holdings of the banks from 1870 to 1873 remained almost constant and in proportion to loans, deposits, and banking capital, the importance of such holdings actually declined.

Thus during the first decade of the national banking system the practice of bond purchase, whether as a "secondary reserve" or otherwise, had not yet begun to show itself. This was true both of years of depression and of years of business activity. In dull times idle money accumulated; in brisk times it was absorbed in loan expansion. Barring special transactions the investment of any appreciable part of their productive resources in bonds

was neither a common nor a growing practice of the national banks.

The crisis of 1873 culminated in panic in the last ten days of September—during which time the New York Stock Exchange remained closed. Banking operations during the panic are primarily of interest in the present connection as indicating the non-liquid character of bonds in time of financial spasm. From September 12 to October 13, 1873, the banks reduced their loans from $944,000,000 to $882,000,000 and deposits of all kinds fell off from $638,000,000 to $530,000,000. But between the same dates, the security holdings of the banks actually increased from $23,700,000 to $25,400,000.[12]

The collapse of 1873 was followed in customary sequence by a period of utter prostration (1873-74) and this by a premature and short-lived revival (1874-75). During both prostration and premature revival the banks added to the relative importance of their security holdings with notably greater rapidity than in the profound and long continued depression which succeeded (1875-79). The post-panic loan recovery culminated in October, 1875, the account then showing a new gain of 4.2 per cent over the pre-panic date; but in this same interval security holdings increased rapidly and uninterruptedly from $23,700,000 to $33,500,000 or 41.3 per cent. On the other hand, the depression of 1875-79, marked by a continuous reduction in loans, was accompanied by a very gradual increase in bond investments—the gain in relative importance, despite reduction in total resources, being less from year to year than in the post-panic period.

Business activity returned in 1879, and culminated in 1882. Banking operations, however, continued to expand, although at diminished rate, for two years more. Loans increased rapidly from 1879 to 1882, reaching a maximum in 1884, and cash reserves and loan rates showed similar tendencies. The growth in security holdings closely paralleled this expansion, such investments increasing from $39,600,000 in 1879 to $66,100,000 in 1882 and to $71,300,000 in 1884.

[12] The minor disturbances of 1884 and 1890 were attended by the same phenomena. The panic conditions of May, 1884, were reflected in a shrinkage of loans from $1,333,000,000 on April 29 to $1,269,000,000 on June 20, whereas security holdings declined only from $73,400,000 to $72,500,000. The stringency of November, 1890, appeared in a reduction of the loan account from $1,986,000,000 on October 2 to $1,932,000,000 on December 19; but between the same dates the bond holdings of the banks actually increased from $115,500,000 to $116,600,000.

The industrial world recovered from the disasters of 1884 with surprising rapidity. Before the spring of 1886, bank loans had reached and passed the high point of pre-panic conditions. Thereafter up to 1890, the expansion of credit, keeping pace with heightened business activity, was even more notable. The movement was arrested rather than reversed by the financial stringency of 1890. Loans moved up cautiously again in 1891 and 1892, until the mid-year collapse of 1893. During the first phase (1885-1890) of this period the bond purchasing policy of the banks underwent no change. The banks simply invested a gradually increasing proportion of their increased resources in additional securities. From 1884 to 1890 the ratio of bond holdings to loans and discounts remained almost constant, and the ratio to assets increased slowly and regularly. Specific influences contributed to this stability. The era of industrial combination and syndicate flotation, on the scale which the events of the next decade were to make familiar, had not yet dawned. Furthermore, from 1886 on the banks inclined to apply some part of the resources which otherwise might have been devoted to investment securities to the purchase of United States bonds, with a view to securing deposits from out the federal surplus. With the stock market liquidation of 1890 and the check to business activity which followed, the banks tended to larger investment in securities. The ratio of bond holdings to loans and to resources rose sharply through 1891-92.

The business world began to show signs of fatigue by the end of 1892. The increase in deposits was checked, the reserves of lawful money declined and the expansion of loans ceased. Accompanying this arrest was stoppage in bond buying. The panic months (May-October, 1893) witnessed contraction in loans, reduction in deposits, and abrupt withdrawal of cash, followed by rapid accumulation of lawful money. During this interval security holdings remained virtually stationary—$150,700,000 on May 4, $149,600,000 on July 12, $148,500,000 on October 3. Practically no relief whatever was afforded the panic strain by the liquidation of bonds, while very slight preparatory aid was derived from the same source.

The panic of 1893 was followed by industrial prostration and agricultural depression. There was false recovery early in 1895, but relapse followed and business remained stagnant until with bumper crops and gold imports activity definitely returned in

the summer of 1897. During these four years banking operations fluctuated within narrow limits. The loan account had barely returned to the pre-panic level in October, 1897, and in this recovery the country banks played no part. Security holdings, on the other hand, increased no less than 40 per cent within the same period. But practically all of this occurred in 1894 and in 1897. In 1895-96 there was, actually, slight liquidation, the surplus cash then at the disposal of the banks being in part applied to the purchase of United States bonds, in part returned to the shareholders in reduction of capital stock, in part retained by the banks as excess reserves.

The decade from 1897 to 1907 is still fresh in mind as a period of industrial energy and financial activity—perhaps the most memorable in the history of the United States. Agriculture prospered, manufactures developed, railroads revived, and industrial enterprises expanded and consolidated. These conditions were reflected in a notable growth of banking activity. The loans of the national banks increased from $2,066,000,000 to $4,678,000,000 and individual deposits from $1,853,000,000 to $4,319,000,000. From 1902 on further expansion was checked only by the close approach of cash holdings to legal reserve requirements. During this entire period the banks applied an increasing proportion of their resources to the purchase of bonds. Security holdings grew from $208,800,000 in 1897 to $708,500,000 in 1907. In absolute amount the increase was uninterrupted; in relation to loans and resources the movement was most pronounced from 1897 to 1901, continuing more slowly thereafter to the close of the period. Only in 1905, in reflex of the extraordinary loan expansion of that year was the tendency reversed.

The crisis of 1907 culminated in panic conditions in October-November 7. Between August 22 and December 3—the closest dates for which figures are obtainable—there occurred, coincident with reduction in loans, deposits, and reserves, an actual increase in security holdings, both absolute and relative to total resources. The certainty of this evidence is somewhat obscured by the large amount, $106,100,000, of bonds borrowed by the banks between the panic dates.[13] Such borrowing facility, tending as it did to

[13] A consequence of Secretary Shaw's first acceptance of other than United States bonds to secure government deposits in 1902, had been to encourage the national banks in the practice of borrowing for temporary use from other banks, trust companies or individuals, up to that time, United States bonds, but thereafter state, municipal, and corporate securities acceptable as se-

make possible an increase in cash reserves by securing larger public deposits, might at first glance be construed as relieving the banks to that extent from the necessity of liquidating their securities and, accordingly, as explaining the absence of any such liquidation. As a matter of fact, however, the actual resort to such borrowing on as extensive a scale as transpired, with all the exceptional circumstances that attended it—marked the rigidity of the bank's security holdings. Had these securities possessed any liquid character whatsoever, realization in this direction would have been, during the panic weeks, by far the line of least resistance.

The course of events since 1907 has repeated the familiar sequence of post-panic history. Loans contracted in the prostration of 1908, recovered in the premature revival of 1909, slowed up again in the reaction of 1910-11, and entered upon a healthier expansion in 1912. In the matter of security holdings, the early action of the banks was determined largely by the incidents of the panic. With the withdrawal of government deposits in the succeeding eighteen months, a large part of the "bonds borrowed" was released from service as collateral—not, however, to be returned to the institutions and individuals from whom borrowed but apparently to be purchased and transferred to the productive investments of the banks. In the twelve months of 1911 the security holdings of the banks increased from $858,700,000 to $1,017,700,000, whereas the years 1912 and 1913 have been marked by small and gradual additions.

III

Although the banks have applied an increasing proportion of their resources to investment securities, this movement has been

curity for public deposits. The authorization of this practice is indicated by the appearance in the Comptroller of the Currency's abstract report of the liabilities of the national banks of an item "bonds borrowed," first in the returns of November 25, 1902, and regularly thereafter. The amount of bonds so obtained by the banks was fairly constant from 1902 through the greater part of 1906; at only one date (March, 1904) did the figure rise markedly. From the end of 1906, however, with the increasing strain upon the money market and the more liberal response of the treasury in placing public deposits there was more active bond borrowing by the banks, continuing until the lull of the summer of 1907 permitted a reduction of the account. During the panic weeks, this movement was actively resumed, the natural impulse of the banks to seek such aid being then stimulated by the relief committee of the New York trust companies, acting under the initiative of Mr. J. P. Morgan.

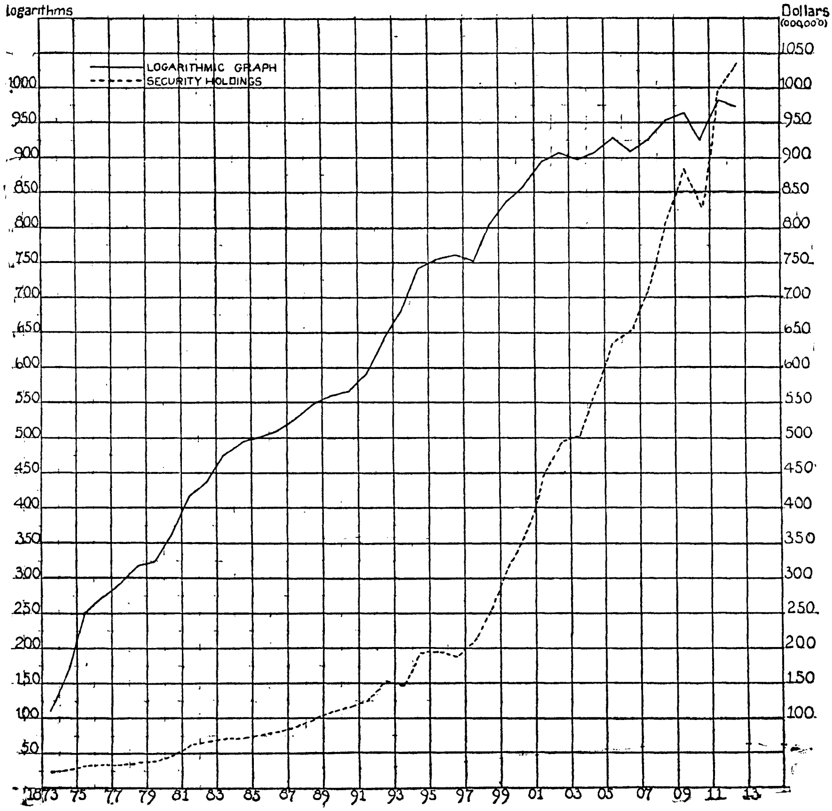
continuous in tendency rather than uniform or regular in pace. An examination of the changes in ratio from year to year indicates that the gain has been markedly greater in certain periods than in others. The principle of variation which might be supposed to prevail, in accordance with the theory of "secondary reserve," is that the banks buy bonds rapidly in dull times when cash accumulates and business demands slacken, and slowly or not at all, or, indeed, liquidate some part of such holdings as they have, when business is active and cash in demand. The actual course of variation, as exhibited in the experience of the national banks, both in aggregate and in groups, has been notably different from this simple or absolute movement. The following table shows the percentage increase or decrease in the ratio of securities to total resources for each year over the corresponding ratio of the year preceding:

TABLE 3.—*Percentage increase or decrease in the ratio of securities to total resources.*

Year	Averaged calls	Autumn call	Year	Averaged calls	Autumn call
	Per cent	*Per cent*		*Per cent*	*Per cent*
1868	-0.7	-7.6	1891	2.6	5.9
1869	4.6	12.1	1892	8.6	13.1
1870	5.9	5.4	1893	8.9	8.4
1871	-4.8	-9.6	1894	18.7	16.5
1872	-5.8	-5.6	1895	3.2	2.3
1873	-0.7	-3.0	1896	0.1	1.5
1874	12.5	14.7	1897	0.5	-2.5
1875	14.6	20.2	1898	6.8	13.1
1876	6.7	5.6	1899	9.1	8.0
1877	6.8	4.7	1900	6.1	5.6
1878	9.0	5.5	1901	7.4	8.2
1879	-4.4	1.4	1902	5.5	2.4
1880	10.7	9.4	1903	-1.6	-1.4
1881	14.3	13.4	1904	1.1	2.2
1882	13.7	4.9	1905	5.1	4.5
1883	4.2	8.7	1906	-3.2	-4.1
1884	6.1	4.3	1907	2.3	3.6
1885	2.2	1.9	1908	7.5	6.2
1886	3.1	2.2	1909	1.6	2.7
1887	2.7	4.0	1910	-7.9	-8.3
1888	5.0	4.7	1911	10.2	13.4
1889	2.7	2.8	1912	2.2	-1.6
1890	4.6	0.8			

The proportional change for all parts of the period considered is shown graphically in the following logarithmic curve, in which the proportional rate of change is indicated directly by the steepness of the curve at the given point. There is also a graph showing

the absolute amounts of net security holdings covering the same period. In both cases the autumn call is used:



As appears from the foregoing curve, the years of most rapid increase from 1890 on were 1891-94, 1898-01, 1905, 1908, and 1911; whereas the years of slowest increase or of outright decline were 1895-97, 1902-04, 1906-07, 1909-10, and 1912. The smallest percental increase (4.5 in 1905) in the first group of years exceeds the largest percental increase (3.6 in 1907) in the second group. The increase or decrease in ratio in particular years or groups of years may result from unusual changes in either of the two factors that determine the proportion—amount of securities or volume of resources. As a matter of fact, with exception of 1893 in the case of the "rapid" years and of 1910 in the case of the "slow" years, the marked changes result primarily from abrupt variation in the amount of securities rather than in the volume of total resources. In the following table, comparison is made of the

bonds acquired in these two groups of years, both as percentage gains and as absolute amounts:

TABLE 4.—*Comparison of the bond purchases in different years.*

Periods	Average annual per cent gain	Absolute increase (million dollars)
"Rapid" periods		
1891–94	10.9	78
1898–01	8.7	210
1905	4.5	68.4
1908	6.2	101.4
1911	13.4	166
		11)623.8
		56.7 average annual absolute gain
"Slow" periods		
1895–97	0.4	15
1902–04	1.0	118
1906–07	-0.2	73.5
1909–10	-2.8	20.6
1912	-1.6	38
		11)265.1
		24.1 average annual absolute gain

If these grouped years be considered in relation to general economic characteristics,[14] the "rapid" periods comprise, in the main, years either of (a) intense business activity or of (b) complete prostration following financial crisis, or both, whereas the "slow" periods include years either of (a) business depression following panic prostration or of (b) business reaction following speculative excess, or both. Thus, of the "rapid" periods, 1891 and 1892 were the highly active years that preceded the panic of 1893, and 1894 was the year of prostration that succeeded the crisis. The years from 1898 to 1901 formed a notable period of industrial expansion and financial adventure—interrupted by mild reaction in 1900—during which the characteristic problems of modern corporate organization first became conspicuous; 1905 was a year of high prosperity; and post-panic prostration again distinguished 1908; 1911, though of mixed quality, was attended by the incidents of reaction from premature business recovery. Of the slow

[14] Cf. Professor Wesley C. Mitchell's valuable studies in the *Journal of Political Economy,* in particular the conspectus in "Security Prices and Interest Rates in 1910-12," *ibid.,* June, 1913. The same author's monumental *Business Cycles* (University of California Press) has reached me, unfortunately, only as these pages are passing through the press.

periods, 1895-97 was marked by the depression which follows post-panic prostration; 1902-04 and to a considerable extent 1906-07 were periods of relapse from speculative excess; 1909-10 represented premature recovery and consequent relapse; and 1912 exhibited the hesitant characteristics of imperfect business revival.

The same tendencies, although less conspicuous, are traceable in the period before 1890. Omitting the first decade of the national banking system as antedating the movements under consideration, the subsequent years of relatively rapid bond buying were 1874-75, a period of premature business revival, and 1880-84 and 1887-88—periods of marked business activity; whereas the years of relatively slow bond buying were 1876-79 and 1885-86, periods of business depression consequent upon financial disturbance, and 1889-90, a period of business arrest. In the panic of 1873, and in the minor disturbances of 1884 and 1890, the banks either kept their security holdings virtually intact or made absolute addition thereto.[15]

These movements can be summarized in the following tentative statement: The national banks buy bonds freely in periods of high business activity characterized by attendant circumstances of large cash deposits, active markets, pool operations, security flotations and syndicate underwritings. This upward movement is checked by the fatigue which follows speculative excess and foreshadows the advent of financial disturbance. Panic strain is neither anticipated nor relieved by the liquidation of securities. With the prostration that marks the end of spasm, securities are again freely acquired—in part the enforced taking over of hypothecated collateral, in part the productive reinvestment of swollen reserves. This prostration is succeeded by depression, marked by smaller cash deposits and inactive financing, during which the banks add but slowly to their bond holdings. If there be premature recovery, securities are bought more actively; but with the relapse into dullness this tendency in turn is arrested. Not until business activity is resumed on a large scale are bonds again bought with rapidity and the cycle resumed.

[15] It would be extremely interesting to study the cyclical relation of bond buying to the crises of 1893 and 1907 and to the disturbances of 1884 and 1890. We should probably find that, in this particular at least, the business cycle is tending to pass from the long revolution to a succession of minor swells and depressions. Such a study might very well be incident to an analysis of the variations in security holdings of the New York banks (see Professor O. M. W. Sprague's useful *History of Crises under the National Banking System,* Washington, 1910).

IV

In accordance with the theory of "secondary reserve," a marked seasonal fluctuation in security holdings might be anticipated. This should take the form of purchase in the spring and summer when money is easy and of liquidation in the autumn in preparation for the interior drain.

Examination of the returns made by the banks to the Comptroller of the Currency for the five calls distributed at approximately uniform intervals over each year afford little evidence of such recurrent liquidation. Of the forty years of banking experience from 1873 to 1913, it appears that in seventeen years there has been either constancy or actual increase in security holdings from each call to the succeeding call. In the remaining twenty-three years, there has been actual liquidation in the volume of such holdings between some two consecutive calls.

There has, moreover, been no uniformity as to the season in which such reduction has occurred. In three, out of the twenty-three liquidating years, the movement took place in the first half-year; in thirteen, in the second half-year; in two, there was overlap. Of the thirteen second half-year movements, the decline occurred between the summer and autumn calls in one year, between the autumn and year-end calls in five years, between the year-end and first-year calls in two years; in five years the autumn to year-end liquidation extended back to the summer call or forward to the first-year call, or both.

A seasonal fluctuation, if tested by absolute amount, is likely to be obscured by the rapid growth in banking resources. In such event, the variation will take the form of slower increase rather than of outright decrease. If the security holdings of the banks be averaged at corresponding seasonal dates, for the period from 1873 to 1913, and the results compared, a traceable although inconsiderable variation is evident:

Call	Average holding (million dollars)	Per cent gain over preceding call
No. 1 (first-year)	276.9	1.8[1]
" 2 (spring)	283.8	2.5
" 3 (summer)	291.0	2.4
" 4 (autumn)	295.9	1.6
" 5 (year-end)	297.0	0.3

[1] Computed as the increase in the average holding at the first-year call for 1874-1913, over the average holding at the year-end call for 1873-1912.

The table of average holdings at seasonal dates shows that activity in bond buying declines in intensity with the calendar year, being greatest from the first-year to spring, then less pronounced from spring to autumn, then imperceptible from autumn to the year-end, after which there is recovery through the year-end back again to the midwinter calls. The period of freest purchase is from midwinter to spring and of greatest restraint from autumn to the year-end. In so far, the variation corresponds with the familiar seasonal fluctuation of currency demands.

Examining the average ratio of securities to total resources at seasonal dates the same general movement is traceable. The ratio increases from the first-year through the autumnal date, but the rate of gain is more rapid from first-year to summer than from summer to autumn, and is replaced by outright decline between the autumn and the year-end. Some part of this arrest is of course due to the inverse course of loans and discounts and other constituents of total resources. But the characteristic quality is imparted by variation in bond buying.

Call	Average per cent to resources	Average per cent gain over preceding call
No. 1 (first-year)	4.977	1.1[1]
" 2 (spring)	5.025	1.0
" 3 (summer)	5.109	1.7
" 4 (autumn)	5.150	0.8
" 5 (year-end)	5.123	— 0.5

[1] Cf. note under preceding table.

V

Turning to the several groups of banks, the same general tendencies are evident as in the case of the banks in aggregate. The country banks, the reserve city banks, the central reserve city banks and the New York city banks have all invested an increasing proportion of their resources in securities, and the rate of such investment has varied more or less directly with prevailing business conditions. The ratios of net security holdings to total assets for the several banking groups at the autumn call in each year since 1883 are presented in the following table:

TABLE 5.—*Ratios of net security holdings to total assets by groups.*

Year	All	Country	Central	Reserve	New York
1883	2.99	3.59	2.82	1.78	2.84
1884	3.12	3.72	2.99	1.86	3.14
1885	3.18	3.82	2.86	2.10	2.96
1886	3.25	3.91	2.82	2.09	2.98
1887	3.38	3.96	3.34	2.09	3.49
1888	3.54	4.19	3.36	2.25	3.57
1889	3.64	4.23	3.52	2.42	3.68
1890	3.67	4.04	3.87	2.70	4.23
1891	3.89	4.26	4.12	2.86	4.44
1892	4.40	4.78	4.55	3.45	5.01
1893	4.77	5.34	4.86	3.50	5.21
1894	5.56	6.37	5.28	4.24	5.68
1895	5.69	6.63	5.24	4.22	5.81
1896	5.78	6.56	5.55	4.44	6.24
1897	5.63	6.73	5.01	4.20	5.54
1898	6.37	7.07	6.17	5.29	6.68
1899	6.88	7.96	5.90	6.12	5.99
1900	7.27	8.17	6.45	6.66	7.17
1901	7.87	9.07	6.25	7.66	7.11
1902	8.06	9.42	6.45	7.50	7.09
1903	7.94	9.14	6.61	7.14	7.82
1904	8.12	9.56	6.83	7.10	7.85
1905	8.49	10.08	6.91	7.46	8.08
1906	8.14	9.39	7.27	6.77	8.55
1907	8.44	9.34	8.38	6.88	10.20
1908	8.97	10.50	7.97	7.33	8.94
1909	9.22	10.95	8.12	7.37	9.36
1910	8.45	10.13	7.45	6.36	8.67
1911	9.59	11.08	9.34	7.26	11.31
1912	9.43	11.22	8.19	7.34	9.86

In the case of the groups of banks as with all the banks, the percentage ratio of securities to assets has increased without notable interruption. As against the five years since 1883, in the case of all banks, in which the percentage of securities was not greater at the autumn call than at the corresponding date of the year preceding, there have been six periods of arrest in the case of the country banks, eight in the case of the reserve banks, nine in the case of the central reserve banks, and eight in the New York city banks.

Of the several groups, the country banks have been the readiest investors in securities. The proportion of resources so employed by the country banks at the latest autumn date available (11.2 per cent on September 4, 1912) has never been equalled by any other banking group outside of the New York city banks, and only on one highly exceptional date by the New York city banks (11.3 per cent on September 1, 1911). More than this, in only two years (1907 and 1911) since 1892 have the country banks not held, at the autumn call, larger percentages of their assets in

bonds than any of the other groups—the larger ratios in both exceptional instances pertaining to the New York banks. Next to the country banks in ratio of security holdings to total resources have been the New York city banks. The reserve and central reserve follow at some distance thereafter, with the central reserve banks tending to forge ahead in consequence of the influence of New York.

The variation from year to year in the proportion of resources invested in securities has been more marked in the case of the groups of banks than of all banks, by reason of the smaller denominator. The percentage change from year to year for each group of banks is set forth in the following table:

TABLE 6.—*Annual percentage change by groups.*

Year	All	Country	Reserve	Central	New York
1884	4.3	3.6	4.4	6.0	10.5
1885	1.9	2.6	12.9	-4.3	-5.7
1886	2.2	2.3	-0.4	-1.3	0.6
1887	4.0	1.2	0.0	18.4	17.1
1888	4.7	5.8	7.6	0.5	2.2
1889	2.8	0.9	7.5	4.7	3.0
1890	0.8	-4.4	11.5	9.9	14.9
1891	5.9	5.4	5.9	6.4	4.9
1892	13.1	12.2	20.6	10.4	12.8
1893	8.4	11.7	1.4	6.8	3.9
1894	16.5	19.2	21.1	8.6	9.0
1895	2.3	4.0	-0.4	-0.7	2.2
1896	1.5	-1.0	5.2	5.9	7.4
1897	-2.5	2.5	-5.4	-9.7	-11.2
1898	13.1	5.0	25.9	23.1	20.5
1899	8.0	12.5	15.6	-4.3	-10.3
1900	5.6	2.6	8.8	9.3	19.6
1901	8.2	11.0	15.0	-3.1	-0.8
1902	2.4	3.8	-2.0	3.2	-0.2
1903	-1.4	-2.9	-4.8	2.4	10.2
1904	2.2	4.5	-0.5	3.3	0.3
1905	4.5	5.4	5.0	1.1	2.9
1906	-4.1	-6.8	-9.2	5.2	5.8
1907	3.6	-0.5	1.6	15.2	19.2
1908	6.2	12.4	6.5	-4.8	-12.3
1909	2.7	4.2	0.5	1.8	4.6
1910	-8.3	-7.4	-13.7	-8.2	-7.3
1911	13.4	9.3	14.1	25.3	30.4
1912	-1.6	1.2	1.1	-12.3	-12.8

The same general correspondence between bond buying and business activity noticeable in the case of all banks may be traced in the several banking groups. The years of large relative increase in security holdings have been periods of great business activity or of post-panic prostration. The years of small increase or relative decline have been periods of speculative reaction or of

business depression. In the following table comparison is made of the bonds acquired by the several banking groups in the years heretofore segregated, the percentages representing the averaged proportional increase, or decline, in the ratio of security holdings to total resources at the autumn call:

TABLE 7.—*Comparison of bond purchases in different years by banking groups.*

Periods	All	Country	Reserve	Central reserve	New York city
"Rapid" Periods					
1891–94	10.9	12.1	12.2	8.0	7.6
1898–01	8.7	7.8	16.3	6.2	7.2
1905	4.5	5.4	5.0	1.1	2.9
1908	6.2	12.4	6.5	–4.8	–12.3
1911	13.4	9.3	14.1	25.3	30.4
"Slow" Periods					
1895–97	0.4	1.8	–0.2	–1.5	–0.5
1902–04	1.0	1.8	–2.4	2.9	3.4
1906–07	–0.2	–3.6	–3.8	10.2	12.5
1909–10	–2.8	–1.6	–6.6	–3.2	–1.3
1912	–1.6	1.2	1.1	–12.3	–12.8

It will be seen that the country banks have followed without material change the course already traced of the banks in aggregate. In the case of the reserve city banks the contrasting variations are somewhat exaggerated, both gains and losses inclining to be greater than in the case of all the banks. The New York city banks, while corresponding in the main with the general movement, present abrupt departures in particular years, and this variation is reflected in the percentages of the central reserve banks by reason of the dominant influence of New York city. Thus in 1896, in 1903, in 1906-07, and in 1912, the reduction in loans and reserves of the New York city banks was much in excess of that of the country banks and even of the reserve city banks, with no correspondingly greater liquidation in bond investments—resulting in relatively higher ratios of securities to reserves in the case of the New York banks. On the other hand, in 1899 and again in 1901, while the country and the reserve city banks added notably to the relative importance of their bond holdings, the New York banks actually reduced their ratios.[16]

[16] In 1907-08, both the post-panic increase and the subsequent decline in the relative importance of security holdings occurred earlier in the case of the New York city banks than of the other banking groups, so that the New

VI

The actual course of bond buying by the national banks, as set forth above, makes necessary some amendment of the explanation commonly advanced of such banking practice, and suggests some revision of public assent thereto as sound banking policy.

It appears that the banks have continuously devoted an increasing part of their resources to the purchase of bonds, in contrast to the movement of loans and discounts and cash reserves, until the amount so invested now practically equals their paid-in capital stock.

The occasions for such purchase, as evidenced by a comparison of alternating periods of rapid and slow acquisition, have been not only the accumulation of unemployed funds and the absence of other channels of profitable employment in periods of business prostration, but also the attractiveness and pressure of new security flotations by reason of syndicate participation, anticipated rise in value or mere corporate contacts, in times of business activity.

Securities so acquired fail notably to serve as a form of secondary reserve to meet the demands of expanding business or panic strain, being non-liquid either in seasonal or in cyclical requirement, in accordance with what might be designated the "lobster-pot" theory of customary purchase at high price levels and of reluctance to sell at low price levels.

This condition seems to call for remedial action—restrictive, on the one hand, in the form of some limitation upon the present complete freedom of the banks to make such investments, and positive, on the other hand, in the provision of more acceptable kinds of investment for unemployed funds. It is obviously inexpedient for the national banks designed as agencies of commercial loan and discount, to be permitted to tie up at inopportune periods increasing parts of their resources in what experience has shown to be practically immobile forms of investment—with consequent restraint upon lending power and greater costliness of commercial discount. In so far as the motive of such investment is the lure of larger interest return and of speculation for the rise, the practice is indefensible. In so far as the purchase of bonds

York ratio for 1907 is relatively larger and that for 1908 smaller, than elsewhere. In this connection and elsewhere, comparison of the security holdings of the several banking groups, distinguished with respect to sectional location, would be of much interest.

by the banks has grown up as an incident of modern corporate financing—induced by the requirements of the corporations rather than by the necessities of the banks—the occasion itself is valid but the mode of its exercise improper. An essential function of an efficient money market is the temporary holding of security issues in the interval between original emission and definite absorption by investors. But this service cannot be economically undertaken nor adequately performed by commercial banks. Aside from matters of equipment and competence, there is an inevitable coincidence in time between the demand for such fiscal service and the requirement for ampler commercial accommodation—with the result of strain and cost to the credit-using community.

An outright prohibition of bond buying would under present conditions, leave the banks at recurring intervals with large amounts of idle money. It is at least an open question whether even under such conditions the advantage of larger reserves, greater elasticity in lending power, and lower discount rates would not compensate for the loss of idle money. But the occasion for such a weighing of advantage and disadvantage is removed by the reasonably certain prospect that impending currency legislation will for the first time give the banks an opportunity to constitute a true secondary reserve for the investment of idle money by authorizing the acceptance and rediscount of commercial paper. Accustomed as the banks are to bond buying and its accompanying incidents, it is doubtful whether the mere establishment of a discount market would of itself destroy existing practices. Coupled with restrictive legislation, the way would seem to be clear for the successful operation of both changes in banking procedure.

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